

# What's That Smell?

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Six people are injured—two unconscious and four conscious. Two more are exposed, and all eight are evacuated to a naval medical facility for precautionary care. That's the tally reported from a case of a hydrogen-sulfide ( $H_2S$ , for short) leak aboard ship. The leak occurred outside a ship's store on the 3rd deck.

What caused this problem? To a small extent, recent modifications to the ship's CHT system were at fault. The tank vents were located near the ventilation intakes, which caused a smell to be drawn into the ship. Two factors aggravated the problem:

- The tank-vent valves were closed or partly closed.
- The vent piping was made of steel and had corroded shut, which restricted the path of the venting gas.

With the aerating system (designed to reduce  $H_2S$ ) in operation, these factors left only one place for the gas to go: up and out the deck drains. All the affected shipmates in this mishap are alive and well, but their tale could have ended much differently. For example, the threshold limit value (TLV) for  $H_2S$ , or sewer gas, as some people call it, is 10 parts per million (ppm), which isn't much. When the level reaches 30 ppm, it becomes immediately dangerous to life and health.

Once you've been introduced to  $H_2S$ , you'll never forget it. In my 17 years as a Navy hull maintenance technician, and 11 more in mostly DCA billets, I can't tell you how many times someone has asked me, "What's that smell?"  $H_2S$  forms as organic matter decays. In our homes, it usually is found in or around the bathroom or where "stuff" is backing up a drain.



Aboard ship, well, that's a different story. Unlike our homes, ships must have all the same services provided by a city's public-works department. In other words, ships must be able to process all the organic waste produced by humans. Besides a huge sewage system, ships have oily-waste holding tanks, and some have a wet AFFF firefighting system.  $H_2S$  may be present in all these systems, and at times, the concentrations can exceed the TLV of 10 ppm.

Anytime you smell a funky odor, follow procedures<sup>1</sup> and report it to DC central, the central-control station, the bridge, or the quarterdeck so an emergency response team can be called away. ☺

## For More Info...

<sup>1</sup> Guidance for handling CHT problems is contained in NSTM 074, V3 (Gas-Free Engineering) and in Ships' Disposal Operating Sequencing System (SDOSS).

